News Release

Defense Advanced Research Projects Agency

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DARPA unveils new robotics program

Early investments in mobile manipulators, or robots, have led to a family of ground platforms now used in military operations for many missions, including countering improvised explosive devices. Although these robots save lives and help reduce casualties, they have limitations. Most require significant human interaction, which increases the time required to complete tasks. Robot performance under human remote control is limited by video fields of view, perspective and communications bandwidth.

DARPA's latest effort, the Autonomous Robotic Manipulation (ARM) program, envisions robots with a high degree of autonomy requiring only high-level supervision by an operator. This simplifies human control and could drastically improve execution of tasks. If successful, these future robots could perform multiple military missions.

The goal of the four-year ARM program is to develop software and hardware that enables a robot to autonomously grasp and manipulate to perform complicated tasks with a human providing only high-level direction.

Three research teams are participating in the hardware track of this program: iRobot, Sandia National Laboratories and SRI International are developing designs for a new multi-finger hand with an emphasis on robust design and low cost. Six teams working in the software track will develop software that enables the robot to perform several tasks. Software researchers include Carnegie Mellon University, HRL Laboratories, iRobot, NASA-Jet Propulsion Laboratory, SRI International and University of Southern California.

In addition to hardware and software initiatives, DARPA plans an outreach track, which will make available an identical robot for public use. This will allow anyone the opportunity to write software, test it, upload it to the actual system then watch via the Internet as this DARPA robot executes that software. Teams involved in this outreach track will be able to collaborate with other teams around the world.

DARPA plans to showcase the robot developed for the ARM program at the Association for Unmanned Vehicle Systems International Conference in Denver, August 24-27. Instructions will be available on how groups can become involved in the interactive portion of this DARPA program.

DARPA's program manager, Dr. Robert Mandelbaum, will be available for questions August 24 from 11:30 a.m. to 12:30 p.m. at AUVSI's press briefing room. He will give a presentation on the ARM program at a time to be announced later at the "Beyond the Booth" showcase.

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